

DUPLICATE OF ORIGINAL
ON FILE IN THE
OFFICE OF THE CITY CLERK,
CITY OF HOLLISTER

ORDINANCE NO. 755

AN ORDINANCE OF THE CITY OF
HOLLISTER PROHIBITING WATER WASTE
AND REPEALING ORDINANCE NO. 752
OF THE CITY OF HOLLISTER

The City Council of the City of Hollister does ordain as follows:

Section 1: Definitions.

"Non-essential water use" is the indiscriminate or excessive dissipation of potable water which is unproductive or does not reasonably sustain economic benefits or life forms.

"Water waste" is the indiscriminate, unreasonable or excessive running or dissipation of potable water.

Section 2: Regulations. All water users shall immediately cease and desist from non-essential and wasteful use of water within the City. Non-essential and wasteful use of water includes, but is not limited to, the following:

- (a) Indiscriminate or excessive water use which allows excess water to run to waste.
- (b) Individual washing of cars, buildings or exterior surfaces without the use of a quick acting, positive shut-off nozzle.
- (c) Use of potable water to irrigate turf, lawns, gardens or ornamental landscaping between 9:00 o'clock A.M. and 5:00 o'clock P.M. by means of other than drip irrigation or hand watering without quick acting, positive shut off nozzle.
- (d) Use of potable water to wash sidewalks or roadways when sweeping provides a reasonable alternative.
- (e) Water waste caused by easily correctable leaks, breaks or malfunctions after a reasonable time. Exceptions may be made by the Director of Public Services of the City of Hollister for corrections which are not feasible or practical.
- (f) Use of potable water for construction purposes, such as consolidation of backfill, unless no other source of water or method can be used.
- (g) Restaurant water service unless upon request.
- (h) Hydrant flushing except when required for public health and safety.

The regulations contained in this Section shall not apply to City water allocated to the Sunnyslope County Water District.

Section 3: Administration. The Director of Public Services of the City of Hollister shall be responsible for the implementation of this Ordinance. The Director shall report to the City Council all factors which affect the implementation of this Ordinance and shall maintain a separate file of any requests for variances from the regulations set forth in this Ordinance.

Section 4: Variances. The regulations set forth in this Ordinance may be modified in writing by the Director of Public Services on written request therefore without formal application or hearing when the modification is consistent with the City's water conservation goals and where the strict application of the regulations of this Ordinance would cause health or safety problems or extreme hardship. In the event an application for modification is denied, the applicant may seek review by the City Council by filing a request for modification with the Clerk of the City of Hollister within ten (10) days of the date of written denial by the Director of Public Services.

Section 5: Violations. The Director of Public Services shall provide any water user who fails or refuses to comply with the provisions of this Ordinance with written notice of violation and an opportunity to correct such noncompliance. The notice of violation shall:

- (a) Be posted at the site of the noncompliance or delivered to the water user.
- (b) State the time, date and place of violation.
- (c) State the general description of the violation.
- (d) State the means to correct the violation.
- (e) State the date by which correction is required.
- (f) A copy of the notice shall be mailed to the address of the user.

In the event any water user shall fail or refuse to correct a violation within the time specified in the Notice, such refusal shall be referred to an appropriate law enforcement agency for investigation and prosecution.

Any water user violating any of the provisions of this Ordinance shall be guilty of a misdemeanor and, upon conviction, shall be punished by a fine of not more than Five Hundred and 00/100 Dollars (\$500.00) or by imprisonment for a term not exceeding six (6) months or by both such fine and imprisonment. A water user shall be deemed to be guilty of a separate offense for each and every day during any portion of which any violation of this Ordinance is committed, continued or permitted.

Section 6: Severability. If any provision of this Ordinance, or the application thereof to any person or circumstance, is held invalid or unconstitutional by a court of competent jurisdiction, such invalidity or unconstitutionality shall not affect any other provision or application, and to this end, the provisions of this Ordinance are declared to be severable. The City Council of the City of Hollister hereby declares that they would have adopted this Ordinance and each section, sub-section, sentence, clause, phrase, part or portions thereof, irrespective of the fact that any one or more sections, sub-sections, sentences, clauses, phrases, parts or portions thereof, be declared invalid or unconstitutional.

Section 7: Ordinance No. 752 of the City of Hollister is hereby repealed.

Section 8: This Ordinance shall take effect thirty (30) days from and after its final passage. Prior to the expiration of fifteen (15) days from the final passage hereof, the Clerk of the City of Hollister shall cause this Ordinance to be published once in the Free Lance, a newspaper of general circulation in the City of Hollister.

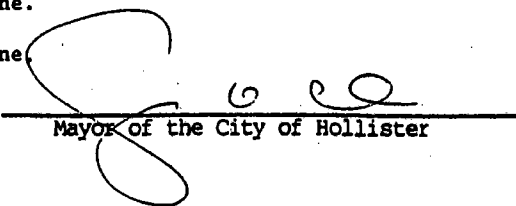
This Ordinance was read and introduced on the 16th day of July, 1990, and passed and adopted by the City Council of the City of Hollister on the 6th day of August, 1990, by the following vote:

AYES: Councilmembers Gonzalez, Hallberg, Escover, Kuckenbaker,
and Mayor Light.

NOES: Councilmembers None.

ABSENT Councilmembers None.

ABSTAINING: Councilmembers None.



Mayor of the City of Hollister

ATTEST:



Clerk of the City of Hollister

ORDINANCE NO. 45

AN ORDINANCE OF THE BOARD OF DIRECTORS OF THE
SUNNYSLOPE COUNTY WATER DISTRICT DECLARING A WATER
SUPPLY EMERGENCY PROHIBITING WATER WASTE AND
ESTABLISHING WATER RATIONING RULES

NOW THEREFORE, BE IT ORDAINED by the Board of Directors of the
Sunnyslope County Water District as follows:

SECTION I
PURPOSE, FINDINGS, AND AUTHORITY

A. Statement of Purpose and Findings: The Sunnyslope County Water District enacts this ordinance to restrict water waste and unnecessary use of water by reason of a present urgency situation caused by drought and threatened water supply shortage. The overall objective is to reduce water usage by 20% district wide.

B. Authority: This ordinance is enacted pursuant to the provisions of Section 31026, et seq. of the California Water Code, which authorizes county water districts to restrict the use of water during any emergency caused by drought or other threatened or existing water shortages and to prohibit the wastage of district water or the use of district water during such periods.

C. Findings:

(1) The lack of rain for the previous three years together with an abnormally low water table has created a water shortage in the Sunnyslope County Water District. A water table study has been performed by the district and is available at the district office.

(2) Greater per capita water consumption increases the entire district's vulnerability to a severe drought.

(3) Water hook-ups and water consumption has steadily increased over the previous three drought years and continues to increase into the present potential drought year. Water district records indicate that from July, 1985 to June, 1989, water connections have increased by 34%.

(4) Water conservation has proven to be a successful mechanism to reduce water consumption. Conservation efforts will provide an interim water supply, reduce drought vulnerability, reduce sewer flows, and ease the impact of the previous drought years, all of which is required to meet the health, safety, and welfare of the residents of the Sunnyslope County Water District.

SECTION II
DEFINITIONS

A. Definition of Water Waste: "Water waste" is deemed to be the indiscriminate, unreasonable, or excessive running or dissipation of potable water. Water waste is prohibited by the terms of this ordinance.

B. Definition of Non-essential Water Use: "Non-essential water use" is the indiscriminate or excessive dissipation of potable water which is unproductive or does not reasonably sustain economic benefits or life forms given the present shortage of potable water. Non-essential water use is prohibited by the terms of this ordinance.

SECTION III
RESTRICTIONS ON WATER WASTE

A. Prohibition: All residential and non-residential customers including individuals, commercial enterprises, and governmental entities receiving water from the Sunnyslope County Water District shall cease and desist from wasteful and non-essential uses of water within the district boundaries. The district shall impose and enforce mandatory prohibitions

against water waste. Water waste and non-essential uses shall include those uses defined in Section II-A and B above and shall further include the following:

- (1) Indiscriminate or excessive water use which allows excess to run to waste.
- (2) Individual washing of cars, buildings, or exterior surfaces without use of quick acting, positive shut-off nozzles.
- (3) Use of potable water to irrigate turf, lawns, gardens, or ornamental landscaping between 9:00 a.m. and 5:00 p.m. by means other than drip irrigation or hand watering without quick acting, positive shut-off nozzles.
- (4) Use of potable water to wash sidewalks or roadways where airblowers or sweeping provides a reasonable alternative.
- (5) Water waste caused by easily correctable leaks, breaks, or malfunctions after a reasonable time within which to correct. Exceptions may be made by the Sunnyslope County Water District Manager for corrections which are not feasible or practical.
- (6) Operation of decorative fountains even if they use a re-circulating system.
- (7) Use of water for construction purposes, such as consolidation of backfill unless no other source of water or method can be used.
- (8) Restaurant water service unless upon request.
- (9) Hydrant flushing except where required for public health and safety.
- (10) Refilling existing private pools except to maintain water levels.

B. The prohibitions contained herein shall not apply to the district water allocated to the City of Hollister.

SECTION IV ADMINISTRATION

A. Implementation: The district's manager shall be charged with implementation of this ordinance. The manager shall report to the board all factors which affect the implementation of this ordinance and shall maintain a separate file of any requests for variances from the prohibition set forth in this ordinance.

B. Alternative If Purpose of Ordinance is Not Met: In the event that the rationing measures set forth in this ordinance are not sufficient to meet the district's overall intent of reducing water usage by 20%, the district shall consider the adoption of a mandatory water rationing ordinance. Such ordinance which shall impose a use/penalty fee upon the water user, calculated at the rate of (\$.30 per gallon), and shall apply to all water users who use water in excess of the maximum ration set forth in said succeeding ordinance.

SECTION V VIOLATIONS

A. Notice of Violation: Should any individual or entity fail or refuse to comply with the provisions of this ordinance, the district's manager or his agent shall provide that person or entity with written notice of the violation and an opportunity to correct the noncompliance. This notice shall be in writing and shall:

- (1) Be posted at the site of the noncompliance.
- (2) State the time, date, and place of violation.
- (3) State a general description of the violation.
- (4) State the means to correct the violation.

- (5) State a date by which correction is required.
(6) A copy of the written notice shall further be mailed to the site of the violation.

B. Should an individual or entity fail or refuse to correct the violation within the time specified in the written notice, said refusal shall be referred to the appropriate law enforcement agency for prosecution as a misdemeanor, which shall be punished by being imprisoned in the county jail for not more than 30 days or by a fine of not more than \$600.00 or by both such fine and imprisonment. The district shall be entitled to pursue any other remedy available at law or equity to abate the nuisance.

SECTION VI RATIONING VARIANCE

The prohibition set forth in this ordinance may be modified in writing by the district manager upon written request without formal application or hearing when the modification is consistent with the district rationing and water conservation goals and where the strict application of the requirements of this ordinance would cause health or safety problems or cause extreme hardship. In the event that a variance applicant is not satisfied with the decision of the district manager, the applicant may seek further relief before the district board of directors by filing a request for a variance within ten days from the date of receiving the decision from the district's general manager.

SECTION VII TERMINATION OF WATER USE RESTRICTIONS

The provisions of this ordinance declaring a water supply emergency and imposing present water use restrictions shall have no force and effect on or after February 14, 1991, except, however, that this date may be extended from time to time by resolution of the board of directors upon findings that the present water supply emergency has not ended.

SECTION VIII INVALIDITY

Should any provision of this ordinance be found by a court of law to be unconstitutional, unlawful, or invalid, such court decision shall not affect the validity of the remaining provisions of this ordinance.

SECTION IX PUBLICATION

This ordinance shall be published once in full in a newspaper of general circulation printed in the district within ten days after adoption.

SECTION X URGENCY EFFECT

The provisions of this ordinance shall have urgency effect and shall become effective on 12:01 a.m. Feb. 14, 1990.

On motion of director Anderson, and seconded by director Hailstone, the foregoing ordinance is adopted this 13 day of February, 1990, by the following vote.

AYES: DIRECTORS: Nelson, Hailstone, Williams & Anderson

NOES: DIRECTORS:

ABSENT: DIRECTORS: Churchill

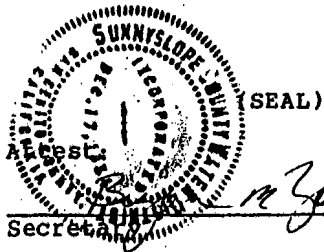


President

I, BRYAN YAMAOKA, Secretary to the Board of Directors of the Sunnyslope County Water District, hereby certify the foregoing is a full, true, and correct copy of an ordinance duly adopted this 13 day of February, 1990.

Witness my hand and seal of the Board of Directors this 13 day of February, 1990.

Bryan Yamaoka
BRYAN YAMAOKA, Secretary



San Benito County Resolution 92-82. Water Conservation Plan

- Provides guidelines to deal with water shortage conditions, including droughts.
- Prohibits certain water uses categorized as wasteful and establishes mandatory conservation measures for wastewater usage.
- Requires the use of water-saving plumbing fixtures for all new construction and for existing structures, where replacements, additions or relocations of plumbing fixtures are proposed.
- Encourages the installation of dual distribution systems for irrigation and the use of reclaimed water to the maximum extent feasible.
- Recommends water-conserving measures applicable to agriculture, including irrigation audits, prescribed irrigation schedules etc.
- Provides a detailed, water-efficient landscape plan applicable to all new and rehabilitated landscaping for public projects and private development, including golf courses. Developer-installed landscaping in residential projects is also subject to these provisions.



FINAL
WATER
CONSERVATION
PLAN

Adopted by Board of Supervisors - July 7, 1992
Resolution 92-82

SAN BENITO COUNTY
PLANNING DEPARTMENT

BEFORE THE BOARD OF SUPERVISORS, COUNTY OF SAN BENITO

A RESOLUTION ADOPTING THE)
FINAL SAN BENITO COUNTY)
WATER CONSERVATION PLAN)
_____)

RESOLUTION NO. 92-82

WHEREAS, On February 26, 1991, the Board passed and adopted Ordinance Number 594, *"An Urgency Ordinance Requiring the Development of a Water Conservation Plan and Requiring the Issuance of Building Permit to Conform to the Water Conservation Principles"*;

WHEREAS, Section 3 of the ordinance provides for the preparation and adoption of a Preliminary Water Conservation Plan. The *"San Benito County Preliminary Water Conservation Plan"* was adopted by the Board on June 4, 1991;

WHEREAS, Section 5 of the ordinance states: "Upon the completion of the county-wide hydrologic study, the board shall hold a public hearing to consider all relevant evidence on creating a Final Water Conservation Plan";

WHEREAS, The San Benito County Ground-Water Investigation was completed by the consultant Luhdorff and Scalanini in October, 1991;

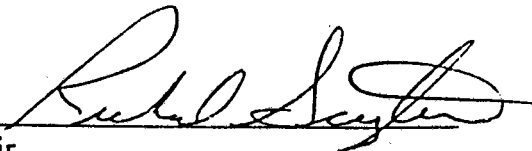
WHEREAS, California Government Code (Chapter 3 of Division 1 of Title 7 of Article 10.8) requires that a copy of the adopted Final Plan be sent to the State by January 31, 1993;

WHEREAS, on July 7, 1992, at a duly notice public hearing and considering the evidence presented at the hearing, the Board considered the content of the Final Water Conservation Plan.

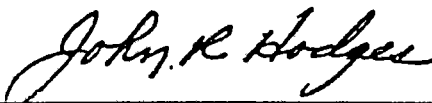
NOW, THEREFORE BE IT RESOLVED by the Board of Supervisors of the County of San Benito hereby adopts the Final San Benito County Water Conservation Plan.

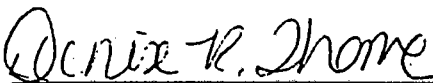
PASSED AND ADOPTED by the Board of Supervisors of the County of San Benito, State of California at the meeting of said board on the 7th day of July, 1992, by the following vote.

AYES: **SUPERVISORS:** M.Graves, Kesler, C.Graves, Bowling, Scagliotti
NOES: **SUPERVISORS:** None
ABSENT: **SUPERVISORS:** None

By:  7/7/92
Chair
San Benito County Board of Supervisors

ATTEST


JOHN R. HODGES, Clerk of the Board

By: 
Denise R. Thome, Deputy Clerk

APPROVED AS TO LEGAL FORM
San Benito County Counsel

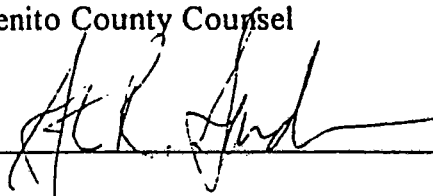
By:  6/30/92
Date

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San Benito County Final Water Conservation Plan

SECTION 1

PURPOSE AND SCOPE

This plan provides guidelines to deal with water shortage conditions which often exist within parts of California including the County of San Benito. This plan was adopted by the Board of Supervisors on July 7, 1992 (Resolution 82-82). This plan was adopted pursuant to Ordinance #594.

SECTION 2

FINDINGS

The Board of Supervisors finds, determines and declares as follows:

- (a) San Benito County faces and has faced in recent years the tremendous pressure of residential growth.
- (b) The demand for water service by water district and property owners is not expected to lessen.
- (c) San Benito County relies extensively on groundwater for its water supply for all uses. Also, San Benito County received water from the federal water project known as the San Felipe Project. The San Felipe Project primarily supplies agriculture at the present time. It is the Board's intent that all runoff be used to the maximum extent feasible to recharge groundwater resources.
- (d) The supply of water in California, particularly in the County of San Benito, is in jeopardy due to the present drought. The drought has not only affected the replenishment of the ground water but affects the supplies available to the San Felipe project as evidenced by recent cutbacks in the proposed supply.
- (e) The County of San Benito is geographically in an area that is historically subject to periodic droughts of lengthy duration. Currently, we are in the fifth year of a devastating drought.
- (f) For the foregoing reasons, the amount of water supply available to the County to serve the citizens is not and will not be adequate to meet the ordinary demands and requirements of water consumers without depleting the water supply of the County to the extent that there would be insufficient water for human consumption,

sanitation, fire protection and all other beneficial uses, and that these conditions are likely to continue to exist.

SECTION 3

DEFINITION OF PERSON

The following term is defined for the purpose of the plan:

- (a) "Person" shall mean any individual person and any firm, partnership, corporation, business entity, district, agency, city, county and any other entity or organization.

SECTION 4

PROHIBITION OF CERTAIN USES

- (a) No person shall waste water as used herein. The term "waste" means:
1. Use of potable water to irrigate grass, lawns, ground cover, shrubbery, crops, vegetation and trees between the hours of 10:00 a.m. and 6:00 p.m. in such a manner as to result in runoff for more than five (5) minutes.
 2. Use of potable water to wash sidewalks, walkways, driveways, parking lots, open ground or other hard surfaced areas by direct application where sweeping will accomplish the same results.
 3. Allowing potable water to escape from breaks within the persons' plumbing system for an unreasonable period of time after the break is discovered and reported.
 4. Use of potable water for sewer system maintenance or fire protection training except as necessary.
 5. Use of potable water for any purpose in excess of the amounts allocated below for each class of service.

SECTION 5

LIMITS ON CERTAIN USES

The following classes or uses are hereby created:

- (a) "Single family residential" which consists of water service to land improved with structures designed to serve as a residence for a single family.
- (b) "Multiple family residential" which consists of water service to land improved with structures designed to serve as or residence for more than a single family.
- (C) "Non-residential" which consists of water service to land improved with structures designed to serve for other than residential uses. Commercial, recreational, charitable, agricultural and cultural uses are included within this class.

SECTION 6

WATER SAVING DEVICES

Any plumbing fixture in any existing structure which is replaced, added or moved must conform with the following criteria (all new construction shall adhere to these guidelines as well):

- (a) Toilets must be ultra low flow toilets and use no more than 1.5 gallons of water per flush.
- (b) Shower heads must use no more than 2.5 gallons of water per minute (ultra low flow shower heads).
- (c) Kitchen and lavatory faucets must use no more than 2.0 gallons of water per minute.
- (d) Flushometer type toilets and urinals shall be of a design that does not exceed 2.0 gallons per flush.
- (e) All faucets in residential sinks and lavatories shall be equipped with faucet aerators and shall be of a design that limits the maximum flow to two gallons per minute. Water faucets for uses other than residential shall have aerators and limit the flow to a maximum of four gallons per minute and shall be equipped with automatic shut-off valves or be operated by front button or pedal valves.
- (f) Fountains: No persons shall use water to operate or maintain levels in decorative fountains, unless such water is recycled in the fountain.

SECTION 7

MANDATORY CONSERVATION MEASURES ON WATER WASTE

- (a) Repair of plumbing, sprinkler and irrigation systems. Any person who is the owner, manager, or person responsible for the day-to-day operation of any premises shall take action to initiate steps to repair any leaking, broken or defective water pipes, faucets, plumbing fixtures, other water service appliances, sprinklers, watering or irrigation systems, or distribution systems within a reasonable time after such person first learns of such leaks, breaks, or defects, and shall thereafter diligently and promptly pursue such repair work to completion.
- (b) Washing of vehicles. No person shall use a water hose to wash any car, truck, boat, trailer, bus, recreational vehicle, camper, aircraft, tractor, or any other vehicle, or any portion thereof, unless the hose is equipped with an automatic shutoff nozzle.
- (c) Cleaning of Structures. No person shall use potable water through a hose to clean the exterior of any building or structure unless such hose is equipped with a shutoff nozzle.
- (d) Cleaning of Surfaces. No person shall use potable water through a hose to clean any sidewalk, driveway, roadway, parking lot, or any other outdoor paved or hard surfaced area, except where necessary to protect public health or safety. The use of a bucket is not prohibited at any time for cleaning food, grease, oil, or other stains or spillage from surfaces.
- (e) Water Spillage. No person shall cause, suffer, or permit water to spill into streets, curbs, or gutters. No person shall use any water in any manner which results in runoff beyond the immediate area of use.
- (f) Swimming Pools and Spas. No person shall empty and refill a swimming pool except to prevent or repair structural damage or to comply with public health regulations.

SECTION 8

RECLAIMED WATER

As appropriate, the installation of reclaimed water irrigation systems (dual distribution systems) may be required to allow for the current and future use of reclaimed water.

Irrigation systems shall make use of reclaimed water unless a written exception has been granted by the local water agency, stating that the reclaimed water meeting standards is not available and will not be available in the future. The reclaimed water irrigation systems shall be designed in accordance with the requirements of local and state regulatory agencies.

California Administrative Code Title 22, Division 4 provides the statutory requirements for wastewater reclamation and the California Department of Health Services has developed "Guidelines for Use of Reclaimed Water." This water conservation plan hereby encourages the use of reclaimed water to the maximum extent feasible.

Reclaimed water means water which, as a result of treatment of domestic wastewater, is suitable for a direct beneficial use or a controlled use that would not otherwise occur. Beneficial use of reclaimed water in San Benito County include, but are not limited to the following:

- o Spray irrigation of crops, landscaping, and golf courses.
- o Surface irrigation of crops.
- o Recreational impoundment.
- o Landscape impoundment.
- o Groundwater recharge.
- o Construction purposes such as soil compaction and dust control.
- o Mining purposes such as dust control and mineral processing.

SECTION 9

AGRICULTURAL

In regards to a water conservation plan, we would look to the farm bureau and Agricultural Commissioner and the agricultural community to offer recommendations for this section.

Agricultural water use is an important element of water conservation planning. The following should be considered by the agricultural community:

1. Irrigation audits can be designed to take into account a variety of crop evapotranspiration needs.
2. Crop tolerances to mineral and chemical concentrations in the soil and soil texture and quality must be taken into account when designing a water conservation program for agriculture.
3. Current irrigation water losses to deep percolation, runoff, and spray evaporation can be minimized with prescribed irrigation schedules.

SECTION 10

WATER EFFICIENT LANDSCAPE PLAN

I. INTRODUCTION

Landscapes are essential to the quality of life in California. They provide areas for recreation and can enhance the environment. In addition, landscapes offer people respite and psychological benefits as well as cultural and social framework and character. With careful planning and maintenance, our landscapes can be safe, attractive, useful, and environmentally sound.

It is the intent of this Plan to promote the values and benefits of our landscapes while recognizing the need to invest water, an increasingly limited resource, and our other resources as efficiently as possible.

This Water Efficient Landscape Plan has been prepared in response to the Water Conservation in Landscaping Act, Assembly Bill 325, Statutes of 1990, Chapter 1145.

The purpose of this Plan is to establish a structure for designing, installing, and maintaining water efficient landscapes in new projects. Provisions for water management practices and water waste preventions for established landscapes are also included.

Some of the features included in the Plan are:

- * Calculation of a water budget and estimated water use.
- * Appropriate plant selection and grouping in hydrozones.
- * The use of reclaimed water.
- * Landscape meters, automatic controllers, and rain switches.
- * Design plans for landscape, irrigation, and grading including a water conservation concept statement.
- * Monthly irrigation schedules.
- * Schedules for ongoing maintenance.
- * Water management practices and waste water prevention for existing landscapes.
- * Soil tests.
- * Education about water efficient landscapes provided.

II. APPLICABILITY

This Plan applies to all new and rehabilitated landscaping for public projects and private development projects including golf courses. Developer-installed landscaping in single-family residence, duplex, and triplex projects is subject to the Plan.

Homeowner-provided landscaping at single family residence, duplex, and triplex lots is excluded.

III. PROVISIONS FOR NEW OR REHABILITATED LANDSCAPES

All new and rehabilitated landscaping for projects listed above shall be subject to the following provisions.

A. Maximum Allowable Water Budget

For design purposes, a maximum allowable water budget is the upper limit of annual water use for the established landscaped area. It is based upon the area's average year climate and the size of the landscaped area. While this figure represents the maximum amount of water to be used on the landscaped area, designing a project to use less water is encouraged whenever possible.

The basic formula for calculating a project's maximum allowable water budget is:

$$\text{MAWB} = (\text{ETo}) (0.8) (\text{LA}) (0.62)$$

MAWB = Maximum Allowable Water Budget (gallons per year).

Eto = Reference Evapotranspiration (inches per year).

0.8 = Allowable Percentage.

LA = Landscaped Area (square feet).

0.62 = conversion factor (to gallons per square feet).

THE VARIABLES

Reference Evapotranspiration (Eto)

Evapotranspiration (ET) is the amount of water that evaporates from the soil and transpires from the plants. Reference evapotranspiration (Eto) is a standard measurement of a large field of four- to seven-inch tall, cool season grass that is well watered. The historical average (normal) Eto of Hollister can be found in Appendix F

0-8: The Allowable Percentage (AP)

The allowable percentage for this calculation is 0.8. it is a factor based on an average plant mix and an average irrigation efficiency. The allowable percentage adjusts the standard measurement of Reference Evapotranspiration to produce the maximum amount of water budgeted annually for the landscape. For more information about the derivation of the allowable percentage, see Appendix E.

Landscaped Area (LA)

The landscaped area is the entire parcel less the building pad, driveways, non-irrigated portions of parking lots, hardscapes- such as decks and patios, and other non-porous areas.

Conversion Factor (0.62)

To calculate the maximum allowable water budget in gallons per year, the conversion factor is 0.62.

To convert gallons per year to 100-cubic-feet per year, another common billing unit for water, divide gallons per year by 748. (748 gallons = 100 cubic feet.)

EXAMPLE CALCULATIONS OF A MAXIMUM ALLOWABLE WATER BUDGET

SITE: Landscaped area of 50,000 square feet in Oakland, California.

$$\text{MAWB} = (\text{ETo}) (0.8) (\text{LA}) (0.62)$$

$$\text{MAWB} = (41 \text{ inches}) (0.8) (50,000 \text{ square feet}) (0.62)$$

$$\text{Maximum Allowable Water Budget} = 1,016,800 \text{ gallons per year}$$

Portions of landscaped areas in public and private sites such as parks, golf courses, or school yards where turf provides a playing surface or serves other recreational purposes may require additional water. A statement to that effect shall be included with the landscape design plan, designating areas to be used for such purposes and the amount of water required.

B. Estimated Water Use

The estimated water use of a project is the amount of water for the year to be used for the established landscape based upon the area's average year climate, the size of the landscaped area, the mix of plants selected, and the efficiency of the irrigation system.

The estimated water use for a landscaped area is composed of the sum of the estimated water use of all hydrozones in that landscaped area. A hydrozone is a subarea of the landscaped area having similar water use that is served by one valve or set of valves with the same settings. Here is a formula that can be used to estimate water use of a project:

$$\text{EWU} = (\text{ETo}) (\text{KI/IE}) (\text{LA}) (.62)$$

$$\text{EWU} = \text{Estimated Water Use (gallons per year)}$$

$$\text{ETo} = \text{Reference Evapotranspiration (inches per year)}$$

$$\text{KI} = \text{Landscape coefficient}$$

$$\text{IE} = \text{Irrigation Efficiency}$$

$$\text{LA} = \text{Landscaped Area (square feet)}$$

$$0.62 = \text{conversion factor}$$

THE VARIABLES

The Landscape Coefficient (KI)

A landscape coefficient or aggregate plant factor is a factor used to modify ETo, based upon the estimated water use of a plant or group of plants. For purposes of this Plan, the landscape coefficient of low water using plants is 0.3, for average water using plants is 0.5, and for high water using plants is 0.8. The landscape coefficient for cool season turf grass such as Kentucky bluegrass is 0.8. For warm season grasses such as bermuda, the landscape coefficient is 0.6.

Irrigation Efficiency (IE)

Irrigation efficiency is derived from estimates of equipment and design efficiency and management efficiency using the following formula:

$$IE = \text{design efficiency} \times \text{management efficiency}$$

The minimum irrigation efficiency for purposes of this Plan is 0.65. Greater irrigation efficiency can be expected for large, flat, simply designed irrigation systems such as athletic fields.

The other variables, ETo, LA, and 0.62 are the same as in the Maximum Allowable Water Budget calculation.

The formula for the estimated water use of the project is the same as the maximum allowable water budget formula, except the allowable percentage of 0.8 is replaced by the landscape coefficient and irrigation efficiency factors. Thus, the maximum allowable water budget represents the upper limit of annual water use for the landscaped area based on average plant mix and average irrigation efficiency. The estimated water use represents an estimate of how much water that landscaped area will need for the year based upon the specific mix of plants and the estimated efficiency of irrigation system used for that project.

C. Plant Selection and Grouping

Plants shall be selected appropriately based upon their adaptability to the climatic, geologic, and topographical conditions of the site.

Plants having similar water use shall be grouped together in distinct hydrozones.

As long as the above criteria are met, any plants can be used in the landscape, providing the estimated water use of the project does not exceed the maximum allowable water budget.

D. Fire Resistive Plants

The selection of fire resistive plants (low fuel volume plants) is especially important in fire prone areas of California. These are plants with less flammable parts: more leaf than wood and less woody undergrowth.

For more information, contact your local fire department or the nearest California Department of Forestry office listed in your telephone directory under State of California.

E. Soils

Soils shall be amended for improving water holding properties as noted in the soils report. An organic mulch at least three inches deep shall be applied to all planting areas, except in turf or groundcover plantings.

F. Reclaimed Water

As appropriate, the installation of reclaimed water irrigation systems (dual distribution systems) shall be required to allow for the current and future use of reclaimed water.

Irrigation systems shall make use of reclaimed water unless a written exemption has been granted by the local water agency, stating that reclaimed water meeting all health standards is not available and will not be available in the foreseeable future. The reclaimed water irrigation systems shall be designed in accordance with the requirements of local and state regulatory agencies.

G. Irrigation Systems

When creating the irrigation design, the following criteria shall be followed:

- 1) **Runoff and Overspray.** Soil types and infiltration rate shall be considered when designing irrigation systems on slopes and level terrains. All irrigation systems shall be designed to avoid runoff, seepage, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, or structures. Proper irrigation equipment and schedules, including features such as repeat cycles, shall be used to closely match application rates to infiltration rates therefore minimizing runoff.

Special attention shall be given to avoid runoff on slopes greater than 10 percent and to avoid overspray in planting areas with a width less than ten feet, or in median strips.

No overhead spray irrigation systems that are subject to wind drift shall be installed in median strips less than ten feet wide.

- 2) **Water Coverage and Uniformity.** For the purpose of determining the maximum allowable water budget, irrigation efficiency shall be assumed to be 0.65. Some projects will exceed this level of efficiency. When calculating the estimated water use of the project, irrigation efficiency shall be at least 0.65.

- 3) **Equipment.**

Meters. Separate landscape meters shall be installed for the irrigation system, except for single family homes.

Controllers. Automatic control systems are required for all projects and must be able to accommodate all aspects of the design.

Valves. Plants which require different amounts of water shall be irrigated by separate valves. If one valve is used for a given area, only plants with similar water use shall be used in that area. Anti-drain (check) valves shall be installed in strategic points to minimize or prevent low-spot drainage, runoff, and subsequent erosion from low elevation sprinkler heads.

Sprinkler heads. Heads and emitters shall have consistent precipitation rates within each control valve circuit. Sprinkler heads shall be selected for proper area coverage, precipitation rate, operating pressure, adjustment capability, and ease of maintenance.

Miscellaneous Devices. All systems shall conform to local backflow and cross connection codes. Rain sensing override devices are required on all irrigation systems. Moisture sensing devices are encouraged where appropriate.

H. Water Features

Recirculating or reclaimed water shall be used for decorative water features. Functional water features (such as swimming pools) and decorative water features shall be included in the landscaped area calculation and considered as a high water using hydrozone. Pool and spa covers are encouraged when appropriate.

I. Maintenance

Landscapes shall be carefully and competently maintained to ensure water efficiency and high quality appearance. A regular maintenance schedule shall include but not be limited to checking, adjusting, and repairing the irrigation equipment; resetting the automatic controller; aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning, weeding, and removing litter in all landscaped areas.

J. Water Management

Water management practices at a minimum shall be in accordance with the State of California Landscape Water Management Program (Landscape Irrigation Audits.) Whenever possible, irrigation scheduling shall incorporate evapotranspiration data such as that from the California Irrigation Management Information System (CIMIS) weather stations to apply the appropriate levels of water for different climates. Landscape irrigation audits shall be conducted by certified landscape irrigation auditors at least once every five years.

Whenever possible, landscape irrigation shall be scheduled between 8:00 pm and 8:00 am to avoid irrigating during times of high wind or high temperature.

K. Public Education

- 1) **Publications.** Information shall be provided to all new, single family residential home owners regarding the design and installation of water efficient landscapes. Information about the efficient use of water shall be provided to water users throughout the community.
- 2) **Model Homes.** At least one model home in each project subject to this Plan shall be used as a demonstration of the principles of water efficient landscapes described in this Plan. Signs shall be used to identify the model as an example of a water efficient landscape and featuring elements such as plant zones, irrigation equipment and others which contribute to the overall water efficient theme.

IV. PROVISIONS FOR EXISTING LANDSCAPES

These provisions apply to unincorporated San Benito County area water purveyors.

A. Water Management

All existing large, landscaped areas (one acre or more), including golf courses, green belts, common areas, multi-family housing, schools, businesses, parks, cemeteries, parks, and publicly owned landscapes shall be audited at least every five years. If the project's water bills indicate that they are using less than or equal to the maximum allowable water budget for that project site, an audit shall not be not required.

B. Water Waste Prevention

Wasteful runoff, seepage, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, or structures shall be prohibited.

V. PROJECT SUBMITTAL/DOCUMENTATION PROCEDURES

Each project submittal requires the following elements:

- A. Water conservation concept statement.
- B. Maximum allowable water budget calculation.
- C. Landscape design plan, Including estimated water use calculation.
- D. Irrigation design plan.
- E. Irrigation schedules.
- F. Maintenance schedules.
- G. Landscape irrigation audit schedule.
- H. Grading design plan.
- I. Soil test

A. Water Conservation Concept Statement

A Water Conservation Concept Statement is a one-paged checklist and narrative summary of the entire project submittal package. See Appendix B for a suggested format for a water conservation concept statement. A copy of the Water Conservation Concept Statement shall be sent to the local water agency along with the Certificate of Substantial Completion.

B. Maximum Allowable Water Budget

For design purposes, the maximum allowable water budget is the upper limit of annual water use for the established landscaped area. See Provisions Section IIIA for more information.

C. Landscape Design Plan

The landscape design plan shall be drawn on project base sheets at a scale that shall accurately and clearly identify:

- * Landscape materials, trees, shrubs, groundcover, turf, etc. Planting symbols shall be clearly drawn and plants labeled by botanical name, common name, container size, spacing, and quantities of each group of plants indicated.
- * Property lines and street names.
- * Streets, driveways, walkways, and other paved areas.
- * Pools, ponds, water features, fences, and retaining walls.
- * Existing and proposed buildings and structures including elevation if applicable.
- * Natural features including rock outcroppings, existing trees, shrubs, etc. that will remain.
- * Tree staking, soil preparation details, and any other applicable planting and installation details.

- * A calculation of the total landscaped area: including the entire parcel less the building pad, driveways, the non-irrigated portions of parking lots, hardscapes- such as decks and patios, and other non-porous areas.
- * Designation of hydrozones: a subarea of the landscaped area having similar water use that is served by one valve or set of valves with the same settings. A hydrozone may be non-irrigated, for example a naturalized area.
- * A calculation of the estimated water use of the landscaped area. The estimated water use shall not exceed the maximum allowable water budget. See Provisions Section III B for more information.

D. Irrigation Design Plan

The Irrigation design plan shall be drawn on project base Sheets. It should be separate from, but use the same format as, the landscape design plan.

- 1) The scale shall be the same as that used for the landscape design plan.
- 2) The irrigation design plan shall accurately and clearly identify:
 - Location of separate landscape meters.
 - * Location, type, and size of all components of the irrigation system, including automatic controllers, main and lateral lines, valves, sprinkler heads, moisture sensing devices, rain switches, quick couplers, and backflow prevention devices.
 - * Static water pressure at the point of connection.
 - * Flow rate (gallons per minute), precipitation rates (inches per hour), and design operating pressure (psi) for each station.
 - * Reclaimed water irrigation systems as described in the Provisions Section III F.
- 3) Irrigation systems shall be designed to be consistent with hydrozones.

E. Irrigation Schedules

An annual irrigation program with monthly irrigation schedules shall be required for the plant establishment period, for the established landscape, and for any temporarily irrigated areas.

The irrigation schedule shall include run time (in minutes per cycle) and frequency of irrigation for each station. The irrigation schedule shall provide the amount of irrigation water (in hundred cubic feet, gallons, or in whatever billing units the local water supplier uses) recommended on a monthly basis. The total amount of irrigation water recommended in the irrigation schedule for the established landscape shall not exceed the project's maximum allowable water budget.

F. Maintenance Schedule

A schedule for ongoing maintenance shall be prepared, reflecting maintenance tasks including those listed in Provisions Section III 1.

G. Landscape Irrigation Audit Schedules

Landscape irrigation audits, described in Provisions Section III J, shall be scheduled and conducted at least every five years.

H. Grading Design Plan

The grading design plan shall be drawn on project base sheets. It should be separate from but use the same format as the landscape design plan. The grading design plan shall indicate finished configurations and elevations of the landscaped area, including the height of graded slopes, pad elevations, and finish grade.

I. Soil Test

A soils report shall be prepared and submitted with the plans. As a minimum, the following shall be included:

- 1) Determine soil texture, indicating the percentage of organic matter.
- 2) Approximate soil infiltration rate (either measured or derived from soil texture/infiltration rate tables.) A range of infiltration rates should be noted where appropriate.
- 3) Measure of Ph, and total soluble salts.
- 4) Recommendations for improving soil conditions to maximize water use efficiency.

A copy of the entire project submittal package shall be delivered to the owners site manager along with the record drawings and any other information normally forwarded to the owner/site manager. A copy of the water conservation concept statement shall be sent to the local water district.

VI. CERTIFICATION

Upon completion of the installation of the landscaping and the irrigation system, an irrigation audit shall be conducted prior to the final field observation. A licensed landscape architect, designer, or contractor shall conduct a final field observation and shall provide a certificate of substantial completion which shall specifically include reference to the landscaping, automatic irrigation system and the irrigation audit, along with a punch list of any observed deficiencies to the Owner of Record. Certification shall be accomplished by completing the Certificate of Substantial Completion form in Appendix E and delivering it to the county and to the local water supplier.

SECTION 11

MANDATORY ENFORCEMENT

(a) The provisions of this plan shall be enforced by the Planning Director and Building Official or his or her designee. Building permits shall only be issued in compliance with this plan.

APPENDIX A: DEFINITIONS

"allowable percentage": The allowable percentage for determining the maximum allowable water budget is 0.8. This represents a factor including consideration of an average landscape coefficient and irrigation efficiency. See page 10 for a more complete discussion.

"amendment": Additions to the soil, such as compost, leaf mold, peat moss, ground bark, which improve aeration and drainage of clay soils and help hold water in sandy soils.

"anti-drain valve": A valve located under a sprinkler head to hold water in the system so it does not drain out of the lower elevation sprinkler heads.

"application rate": The depth of water applied to a given area in one hour, usually measured in inches per hour.

"automatic controller": A mechanical or solid state timer, capable of operating valve stations to set the days and length of time of a water application.

"backflow prevention device": A safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.

"distribution uniformity": A measure of how evenly water is applied over an area. (scientific: The ratio of the average low quarter depth of irrigation water infiltrated to the average depth of irrigation water infiltrated, expressed as a percent.)

"emitter": Fittings that deliver water slowly through small openings from the lateral line to the plant.

"established landscape": The point at which plants in the landscape have established themselves into the adjacent soil.

"establishment period": For purposes of this Plan, the first year after installing the plant in the landscape. The actual establishment period varies depending upon the plant species, the development of the plant's root system, soil conditions, and other environmental factors.

"estimated water use": The amount of water the designer estimates that the project will need on an annual basis. The estimated water use cannot exceed the maximum allowable water budget. See Provisions Section III B for a suggested formula and more information.

"evapotranspiration": The quantity of water evaporated from adjacent soil surfaces, transpired by plants, and retained in plant tissue during a specific time.

"flow rate": The rate at which water flows through pipe fittings and valves.

"fire resistive plants (low volume fuel plants)": Those with less flammable parts: more leaf than wood and less woody undergrowth.

"hydrozone": A portion of the landscaped area having plants with similar water needs that are served by a valve or set of valves with the same setting. A hydrozone may be non-irrigated, for example, a naturalized area.

"infiltration rate": The rate of water entry into the soil expressed as a depth of water per unit of time in inches per hour. The infiltration rate changes with time during an irrigation.

"irrigation efficiency": The measurement of the amount of water beneficially used divided by the amount of water applied.

"landscape coefficient": The functional equivalent of a crop coefficient in agriculture. When multiplied times Eto, it estimates the amount of water required to maintain landscape plants in good condition.

"landscape irrigation audit": A process to perform site inspections, evaluate irrigation systems, and develop efficient irrigation schedules.

"landscaped area": The entire parcel less the building pad, driveways, non-irrigated portions of parking lots, hardscapes such as decks and patios, and other non-porous areas.

"lateral line": The water delivery pipeline that supplies water to the emitters or sprinklers from the main line.

"main line": The pipeline that delivers water from the water source to the lateral lines.

"mature landscape": See "established landscape".

"maximum allowable water budget": For design purposes, the upper limit of annual water use for the established landscaped area. It is based upon the area's average year climate and the size of the landscaped area.

"moisture sensing device": A device that measures the moisture condition of the soil in a variety of ways.

"mulch": Any material such as leaves, bark, or straw left loose and applied to the soil surface to prevent evaporation.

"operating pressure": The pressure at which a system of sprinklers operates. (Static pressure minus pressure losses.) This is usually indicated at the base or nozzle of a sprinkler.

"overspray": When sprinklers deliver water beyond the landscaped area, wetting pavements, walks, structures, or other non-landscaped areas.

"percolation": The movement of water through the soil.

"potable water": Water which is meant for human consumption.

"precipitation rate": The rate at which water is applied, usually expressed in inches per hour.

"pressure compensating bubbler": A sprinkler head useful for watering trees and shrubs with water basins: produces a reduced flow of water that bubbles on the soil.

"quick coupling system": A sprinkler system which uses permanently installed valves and sprinklers that can be moved from valve to valve.

"rain switch or rain shut off valve": Measures rainfall and automatically shuts off the irrigation system when water reaches a certain level.

"reclaimed water": Treated or recycled water of a quality suitable for non-potable uses such as landscape irrigation; not intended for drinking.

"record drawing": A set of reproducible drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor.

"reference evapotranspiration (Eto)": A standard measurement of evapotranspiration for a large field of 4- to 7 inch tall, cool season grass that is well watered.

"run off": Water which is not absorbed by the soil or landscape to which it is applied. Run Off occurs when water is applied at too great a rate or when there is a severe slope.

"soil texture": The classification of soil based on the percentage of sand, silt, and clay in the soil.

"sprinkler head": A device which discharges water through a nozzle.

"static water pressure": The pipeline or municipal water supply pressure when water is not flowing.

"station": An area served by one valve or set of valves that operate simultaneously.

"turf": A surface layer of earth containing grass with its roots.

"valve": A device used to control the flow of water in the irrigation system.

"water conservation concept statement": A one-paged checklist and narrative summary of the project. See Appendix D for a sample statement.

APPENDIX B: SAMPLE WATER CONSERVATION CONCEPT STATEMENT

Project Site:

Project Number:

Project Location:

Landscape Architect/Designer/Contractor:

Included in this project submittal package are:

(Check indicating completion)

- A. A Maximum Allowable Water Budget
 - Reference ET (inches per year)
 - Landscaped Area (square feet)
 - Water Budget (gallons or cubic feet per year)
- B. A Landscape Design Plan
 - Estimated Water Use (gallons or cubic feet per year)
- C. An Irrigation Design Plan
- D. Irrigation Schedules
- E. A Maintenance Schedule
- F. A Landscape Irrigation Audit Schedule
- G. A Grading Design Plan
- H. A Soil Test

Description of Project:

APPENDIX C: SAMPLE CERTIFICATE OF SUBSTANTIAL COMPLETION

Project Site: Project Number:

Project Location:

Preliminary Project Documentation Submitted: (check indicating submittal)

- A. Maximum Allowable Water Budget
reference ET (inches per year)
landscaped area (square feet)
water budget (gallons or cubic feet per year)
- B. Landscape Design Plan estimated water use (gallons or cubic feet per year)
- C. Irrigation Design Plan
- D. Irrigation Schedules
- E. Maintenance Schedule
- F. Landscape Irrigation Audit Schedule
- G. Grading Design Plan
- H. Soil Test

Post-installation Inspection: (Check indicating substantial compliance)

- A. Plants installed as specified
- B. Soils amended as noted in soils report
- C. Irrigation system installed as designed
dual distribution system for reclaimed water
minimal run off or overspray

Project submittal package and a copy of this certification has been provided to owner/manager and local water agency

I/we certify that work has been installed in accordance with the contract documents.

Contractor Signature	Date	State License Number
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I/we certify that based upon periodic site observations, the work has been substantially completed in accordance with the Water Efficient Landscape Plan and that the landscape planting and irrigation installation conform with the approved plans and specifications.

Landscape Architect Signature	Date	State License Number
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(Certificate of Substantial Completion, continued)

I/we certify that I/we have received all of the contract documents and that it is our responsibility to see that the project is maintained in accordance with the contract documents.

Owner Signature

Date

APPENDIX D: EXAMPLE CALCULATIONS FOR MAXIMUM ALLOWABLE WATER BUDGET AND ESTIMATED WATER USE

These two examples are for the same project in Fresno, California. While the total amount of water will vary from one place in the state to another, the proportions of high, average, and low water using plants, will remain the same. These examples demonstrate that the following plant combinations are allowed within the water budget.

20% high water using plants; 40% average; 40% low

30% high water using plants; 20% average; 50% low

MAWB=(Eto) (0.8) (LA) (0.62)

EWU=(Eto) (KI/IE) (LA) (0.62)

MAWB=Maximum Allowable Water Budget (gallons per year)

Eto= Reference Evapotranspiration (inches per year)

0.8= Allowable Percentage

LA= Landscaped Area (square feet)

0.62=Conversion Factor (to gallons per square feet)

EWU=Estimated Water Use (gallons per year)

KI=Landscape Coefficient

IE=Irrigation Efficiency

PROJECT SITE ONE: Landscaped area of 50,000 square feet in Fresno California

MAWB = (Eto) (.8) (LA) (.62)

= (51 inches) (.8) (50,000 square feet) (.62)

Maximum Allowable Water Budget=1,264,800 gallons per year

EWU = (Eto) (KI/IE) (LA) (.62)

Hydrozone 1 (H1) is 20% of LA with KI .8(high water using plants)

Hydrozone 2 (H2) is 40% of LA with KI .5(average water using plants)

Hydrozone 3 (H3) is 50% of LA with KI .3(low water using plants)

(H1) = (51 inches) (.8/.65) (10,000 square feet) (.62) = 389,169 gal.

(H2) = (51 inches) (.5/.65) (20,000 square feet) (.62) = 486,461 gal.

(H3) = (51 inches) (.3/.65) (20,000 square feet) (.62) = 291,876 gal.

Estimated Water Use = (H1)+(H2)+(H3) =1,167,506 gallons per year

EWU of 1,167,506 is less than MAWB of 1,264,800

PROJECT SITE TWO: Landscaped area of 50,000 square feet in Fresno, California

$$\begin{aligned}\text{MAWB} &= (\text{ETo}) (.08) (\text{LA}) (.62) \\ &= (51 \text{ inches}) (.8) (50,000 \text{ square feet}) (.62)\end{aligned}$$

Maximum Allowable Water Budget = 1,264,800 gallons per year

$$\text{EWU} = (\text{ETo}) (\text{KI/IE}) (\text{LA}) (.62)$$

Hydrozone 1 (H1) is 30% of LA with KI .8 (high water using plants)

Hydrozone 2 (H2) is 20% of LA with KI .5 (average water using plants)

Hydrozone 3 (H3) is 50% of LA with KI .3 (low water using plants)

$$(\text{H1}) = (51 \text{ inches}) (.8/.65) (15,000 \text{ square feet}) (.62) = 583,753 \text{ gal.}$$

$$(\text{H2}) = (51 \text{ inches}) (.5/.65) (10,000 \text{ square feet}) (.62) = 243,230 \text{ gal.}$$

$$(\text{H3}) = (51 \text{ inches}) (.3/.65) (25,000 \text{ square feet}) (.62) = 364,846 \text{ gal.}$$

$$\text{Estimated Water Use} = (\text{H1}) + (\text{H2}) + (\text{H3}) = 1,191,829 \text{ gallons per year}$$

EWU of 1,191,829 is less than MAWB of 1,264,800

APPENDIX E: DERIVATION OF THE ALLOWABLE PERCENTAGE

This allowable percentage is derived from the following formula:

$$AP (0.8) = \frac{\text{average KI (0-5)}}{\text{average IE (0-65)}}$$

The average landscape coefficient (average KI) is a functional equivalent of a crop coefficient for landscapes. When multiplied times Eto, it estimates the amount of water required to maintain landscape plants in good condition. Since species and site conditions vary at a project location, a range of KI values will occur, representing high (0-8), average (0.5), and low (0.3) water requiring conditions.

When water requirements are averaged across a project, an average landscape coefficient results. For purposes of this formula, the value for the average 10 is 0.5. This represents a balance between high, moderate, and low. water use conditions.

Average Irrigation Efficiency (average IE) is derived from estimates of equipment and design efficiency (0-8 to 0.85) and management efficiency (0.8 to 0.85) using the following formula:

$$IE = \text{design efficiency} \times \text{management efficiency}$$

The average irrigation efficiency for purposes of this formula is 0.65.

$$\text{Therefore, } 0.5 \text{ (KI)} / 0.65 \text{ (IE)} = 0.8 \text{ (AP)}$$

APPENDIX F: REFERENCE EVAPOTRANSPIRATION

In inches (Historical data extrapolated from 12-month normal year Eto maps and U.C. Publication 21426)

County: San Benito

City: Hollister

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann. Eto
1.5	1.8	3.1	4.3	5.5	5.7	6.4	5.9	5.0	3.5	1.7	1.1	45.1

County: Monterey

City: King City

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann. Eto
1.7	2.0	3.4	4.4	4.4	5.6	6.1	6.7	6.5	5.2	2.2	1.3	49.6

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